SUMMARY OF STATEWIDE MERCURY WORKGROUP MEETING
August 23, 2007
DEQ Building #2, Conference Room 101
168 N 1950 W
Salt Lake City, UT 84114-4850

WORK GROUP MEMBERS PRESENT
Bill Johnson: University of Utah
Chris Cline for Nathan Darnall: U.S. Fish and Wildlife Service
Kevin Okleberry: Salt Lake Valley Health Department
Scott Everett: UDEQ DERR
John Luft for Walt Donaldson: Utah Div. of Wildlife Resources
Bruce Waddell: Private Duck Clubs
Paul Dremann: Trout Unlimited
Dave Susong for Dave Naftz: U.S.G.S.
Steve Packham for Cheryl Heying: UDEQ DAQ
Jeff Salt: Great Salt Lake Keeper
John Whitehead: UDEQ DWQ
Jason Walker: N.W. Band of the Shoshone Nation
Tim Wagner: Sierra Club
Mark Martin for Kent Hauck: UDAF

OTHERS IN ATTENDANCE
Amy Dickey: UDEQ DWQ
Scott Daly: UDEQ DWQ
Jim Berkley: EPA Denver
Larry Scanlan: Utah Health Laboratory
Bill Sinclair: UDEQ
Chris Bittner: UDEQ SHW
Maunsel Pearce: GSL Alliance
Trace Salmon: CMA-TOCDF
Mckell Drury: UDEQ
Tim Olinear: EG&G
Elizabeth Lowes: EG&G
Doug Bacon: UDEQ/DERR
Tamra Peterson: DCD
Amy Blauser: Outreach
Aaron Redman: HydroQual
Rick Sprott: UDEQ

I. GREETINGS/MEETING CALLED TO ORDER

John Whitehead, Chair, called the meeting to order at 9:00 AM. He welcomed the Workgroup and the public. He noted that Sue Odekirk (Power Generating Industry), Wayne Ball (Dept. of Health) and Dale Hoff (EPA Region 8) will no longer be Work Group members. Replacements for them will need to be found.

Rick Sprott, the new DEQ Director, introduced himself. He stated that working to understand more about mercury in Utah is a personal commitment. His office will work hard to support the endeavors of the Utah Statewide Mercury Work Group. As Director of DEQ, he will continue to seek funding assistance from state and federal sources for this work.

Jeff Salt: Dianne Nielson supported funding efforts for mercury work, but political issues made it challenging. Asked if Rick had a new perspective on how to approach legislators and have them be more receptive to our needs?

Rick Sprott: Said he will talk with legislators and help them understand the mercury issue. He will speak honestly and see what comes of it.

Tim Wagner: Asked how DEQ will work with other states on the issue?

Rick Sprott: Noted that Bill Sinclair is leading the charge on public awareness and is working to bring many states in the region together to tackle the mercury issue. The first meeting of western states and EPA regions to discuss mercury will take place this fall.

II. REVIEW OF MAY 3, 2007 MEETING SUMMARY

The Work Group approved the meeting summary from May 3, 2007. No additions or changes are necessary.

III. OVERVIEW OF NEW CONSOLIDATED FISH ADVISORIES WEBSITE: BRANDON SMART, UDEQ

Brandon gave an overview of the new website that hosts information on current fish advisories for Utah. Several agencies including DNR, DEQ, and the Utah Health Department were involved in the development of the site and will be posting information to it. The web address is www.fishadvisories.utah.gov. The site offers consolidated and consistent information for the public. It includes information on current advisories, health risks, maps, FAQs, safe eating guidelines and contacts. It includes links to other agencies, the Statewide Mercury Work Group website and miscellaneous information regarding mercury. A waterfowl advisory page is also being developed. Please contact Brandon Smart at (801)536-4274 or bsmart@utah.gov with any suggestions or comments you may have.

Jeff Salt: Stated that the website looks great and asked Brandon to make a pitch to the Anglers Coalition, who could assist with additional links, information and photos.

Jason Walker: Asked if a list serve could be made so that information regarding new advisories would be emailed out automatically to those interested.

Bruce Waddell: Recommended that agencies have links on their sites sending the public to this advisory site.

IV. DESERET CHEMICAL DEPOT MUSTARD GAS DISPOSAL; HG UPDATE TIM OLINGER

Tim Olinger gave a one year update on the experiences, challenges, and future plans for the Tooele Chemical Agent Disposal Facility Mustard Destruction Campaign. The stockpile items were known to contain varying concentrations of mercury. One primary goal was to prevent having an idle facility while waiting for a modification to the process to address the mercury. To tackle this, the items with little or no mercury were processed during the design and installation of mercury abatement equipment. The facility was able to show compliance with the mercury emission standard throughout the process. Approximately 6,400 1 ton containers needed to be processed. Each one contained nearly 700 pounds of mustard agent that was used in early 1900s and has been stored there long term. To date, half of the stockpile has been sampled. The future plan for the facility is designing, installing and optimizing the Pollution Abatement Filter System (PFS).
Of the 1,121 pounds of mercury air emissions last year, the facility only contributed 2.5 pounds. They are allowed to emit up to 32.8 pounds, so they are going above and beyond to control emissions.

V. GREAT SALT LAKE (GSL) ISSUES

A. Overview of GSL Food Chain Organisms Life Cycle. John Luft, DWR

Brine shrimp and brine flies are the two primary halophiles fed upon by migratory birds on the GSL. Brine shrimp are crustaceans with a life cycle lasting approximately 90 days. Many different species exist worldwide. Adults eat algae, reproduce sexually, and grow to nearly one half inch in length. The brine shrimp cysts hatch in March when the water warms up. DWR has observed 2-4 generations each season. The shrimp produce cysts and then die in late fall when water temperatures drop. The cysts (eggs) are the product that is harvested, not the shrimp. There are as many as ¼ million brine shrimp eggs in a rounded teaspoon. Last season the industry harvested over 16 million pounds of egg.

Brine flies are a common food source for many avian species on the lake. Adult flies lay their eggs on the surface of the water, the larvae settle on the bottom attached to stromatolites or bioherms, they pupate, float to top, and the 3-5 day cycle begins again. DWR does research every season geared toward maintaining a sustainable brine shrimp population for both birds and harvesters for the current season and next.

Larry Scanlan: Asked how harvesters get a pure cyst sample? Reply: Most live brine shrimp are lower in the water column, while the cysts rise to surface. Later in the season, as the shrimp die, the harvesters must clean and filter to get pure samples.

Wayne Wurtsbaugh: Commented that brine shrimp have highly variable levels of lipid in them. Mercury concentrates in lipids, so perhaps that is why we see such variability with mercury concentrations in the shrimp samples. Also, later in the season we see an increase in feeding on lower level algae and maybe that contributes to a jump in the mercury concentration.

B. **Update on Funding for GSL Mercury Work. John Whitehead, DWQ**

DWQ has received funding to support the efforts to characterize mercury concentrations in the GSL ecosystem. $66,480 was approved by the legislature. $100,000 was awarded from EPA for GSL wetlands work and $87,083 was awarded from EPA for GSL open water studies.

C. **Work Plan for GSL Study. Amy Dickey, DWQ**

DWQ has received funding to support efforts to quantify mercury in the GSL. The work will include sampling water, sediment, waterfowl tissues and food chain biota within the Great Salt Lake (GSL) ecosystem. A work plan titled Assessment of Mercury in the Great Salt Lake Ecosystem has been written. The data obtained will be used primarily to identify additional studies and focus areas. We will also get some insight into the sources of mercury to the lake. That information will help in formulating protective measures for both public health and this significant wetland ecosystem.

Project outputs from this work will include a considerable data set, coordinated analysis of the results to explore interactions and findings between media type, and a comprehensive written report describing methods used, sampling locations, samples collected and analytical results obtained. The report will include a complete analysis of the data along with conclusions and recommendations for further actions needed to characterize, preserve, restore and protect the GSL ecosystem.

i. Water and Sediment Sampling: Dave Naftz, USGS

One of the steps required to understand mercury sources and cycling in the open waters of GSL is to determine the amount of mercury entering the open water of GSL through surface water. The U.S. Geological Survey will be collecting inflow and open water samples as part of the work plan. Data gathered from the inflow sites will allow for the

modeling of mean daily mercury loads from all input sources to GSL. The results will be used to estimate an annual mercury budget for the open water of GSL. In addition, the results will allow for a comparison of the seasonal and geographic variations in mercury loadings with respect to seasonal biological cycles in the GSL ecosystem.

Sediment core samples are very useful in determining temporal trends of mercury accumulation in lake bottom sediments and can be useful in mercury source analyses. Sediment samples have been collected by the USGS in the summer of 2006 at the same locations that water samples are collected as a part of the recent selenium work being conducted on the GSL. These samples are being age dated and will also be analyzed for mercury content.

Water and sediment from three major GSL wetland units will be sampled several times in 2008. Sampling locations will be selected to characterize inflow sites, wetland sites and outflow sites.

ii. Food Chain Organisms and Waterfowl: John Luft, DWR

DWR will be collecting brine shrimp, brine flies, seston and several avian species on the open water of the GSL. These will all be analyzed for total mercury. DWR will visit seventeen sites twice per week October through January and once per month between March and August. They will perform double net hauls for shrimp and egg at six of those sites and use them for mercury analysis. The six sites were selected based on increased concentrations of goldeneye and grebes. DWR will also collect some bird species feeding on streaks of brine cysts (gulls, goldeneye and shovelers).

For the wetlands component cinnamon teal, which reproduce at the lake, and shovelers, which are harvested in significant numbers, will be collected and their breast tissue analyzed for total mercury. Eggs will also be harvested and analyzed. This wetland work will be done in Ogden Bay, Bear River Bay, and the Turpin Unit of Farmington Bay.

Maunsel Pearce: Asked if any other parts of the western flyway are involved? Reply: No, we have limited resources right now so the focus is local to help support advisories.

Chris Cline: Stated that stomach contents need to be studied to confirm feeding habits. Reply: DWR will look into that if funding is available.

iii. Benthic Food Web Analysis of GSL: Wayne Wurtsbaugh, USU

The objective of this work will be to describe the seasonality of brine flies and to sample brine fly larvae for mercury concentration. The GSL benthic community is poorly understood. This is an important area to study since methylation of mercury occurs primarily in benthic zones of the lake and benthic algae is a potential food source for brine shrimp.

Stromatolites will be sampled for periphyton and brine fly larvae and pupae at depths of 1m and 3m. Sampling will take place at three locations in September and late October.

VI. DEQ MERCURY SOURCE ASSESSMENT PROTOCOL – STATUS REPORT: JOHN WHITEHEAD, DWQ

John thanked everyone who commented on the draft. A second draft is being finalized. It should be available soon as a guide for mercury source identification and mitigation. Contact John at (801)538-6053 or jwhitehead@utah.gov if you would like to see a compiled list of comments and responses.

VII. USGS SEDIMENT CORE STUDY ON NEWCASTLE RESERVOIR: DAVE NAFTZ, USGS

Dave was not present to give a status report. This item will be added to the November agenda.

VIII. MERCURY CONFERENCE STATUS REPORT: JOHN WHITEHEAD, DWQ

Discussions have just begun within DEQ on planning a mercury conference. Still being decided is who will lead the effort, who will be involved, what funding sources are available and what topics will be covered. It could be localized for Utah or include many states. No resources are in place yet in Utah. Please direct comments or suggestions to Leah Ann Lamb, DEQ, who is leading the charge.

Jeff Salt: Voiced concern that his organization, The Great Salt Lakekeepers, was not notified of the planning process. Months ago they talked about partnering on a conference like this. Why was no info shared with his organization?

John Whitehead: Stated that it is still very early in the planning process. John told Jeff to contact LeahAnn Lamb to get involved.

Jason Walker: Said thanks for including the tribes in the list of people who need to be involved with the conference. He would like to stay involved in the planning process.

Wayne Wurtsbaugh: Announced that there will be a week long international conference on saline lakes May 16, 2008. It will be held at the University of Utah.

XI. PROPOSED AGENDA ITEMS FOR NEXT MEETING

John Whitehead: Discussion of the Statewide Mercury Work Group 2008 goals. John encouraged members to come prepared to speak about their goals at the next meeting.

Jason Walker: Hear an update on the senate bill on the proposed mercury monitoring act. The bill could potentially support funding for wet and dry deposition sampling.

Paul Dremann: Hear update on any new DWQ fish sampling and results.

Chris Cline: USFWS can present information about the completed GSL grebe study.

Bruce Waddell: Funding initiatives and update the spreadsheet on wants and needs of researchers on the GSL.

Paul Dremann: Have DEQ "lobbyists" here to talk about their legislature involvement and coordination.

Tim Wagner: Update on the Cache Valley hair analysis situation.

Larry Scanlon: Review of a recent article in Environmental Science and Technology about trends in fish tissue concentration in lakes throughout Michigan.

NEXT MEETING: NOVEMBER 15, 2007. DEQ BUILDING 2, RM 101, 9:00 AM